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STATISTICAL BULLETIN
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MORTALITY EXPERIENCE OF THE FIRST QUARTER OF 1927

The health record of the industrial populations of the United States and Canada was better during the first quarter of 1927 than for the corresponding period of any preceding year.

This is indicated by the mortality record for January, February and March of more than 18,000,000 people, the Industrial policyholders of the Metropolitan Life Insurance Company, who constitute more than one-seventh of the total population, and more than one-fourth of the urban population of the two countries. Their deathrate for the quarter was 9.7 per 1,000. It is true that this remarkable figure was registered once before in the initial quarter of a year (in 1921); but in that year the Company did not insure infants under one year of age. This age period is the one which registers the maximum deathrate, and it is obvious that with infant mortality eliminated, the first three months of 1927 will show considerable improvement over the former minimum deathrate.

The significance of the above finding should not be minimized. In past years the mortality experience of this large cross-section of the American and Canadian populations has proved a most reliable index of what has occurred in the population as a whole. It is very probable, therefore, that later reports will show that the two countries have enjoyed most favorable health conditions during the first quarter of this year.

The deathrate for the white policyholders was 8.9 per 1,000, which represents a decline of 10.1 per cent. from the rate of the first quarter of 1926 (9.9). Among the colored, the rate dropped to 15.5, an improvement of 7.7 per cent. over the figure (16.8) recorded last year.

Inspection of the table on page 3 brings out clearly the items that have been chiefly instrumental in the making of this remarkable record.

The tuberculosis deathrate of 80.8 per 100,000 among white policyholders marks an improvement of 5.9 per cent. as compared with that for the corresponding months of 1926, and stands as a new minimum tuberculosis deathrate by a large margin. Among the colored, there was a small drop in the mortality from tuberculosis. The deathrate from the three principal "degenerative" diseases, heart disease, Bright's disease, and cerebral hemorrhage, registered declines among the whites of 8.2 per cent., 9.5 per cent., and 10.2 per cent. respectively. There was also an improvement for each of these conditions among the colored policyholders. The deathrate among white policyholders for pneumonia (103.9 per 100,000) was much lower than was last year's first-quarter figure (139.5). There was also a large decrease among the colored. This improvement is due, in large part, to a 39.3 per cent. reduction in the mortality from influenza among the whites and one of 34.3 per cent. among the colored. The drop in the influenza rate has occurred despite the fact that the morbidity from this disease has been high throughout the quarter. The type of influenza which has prevailed during the early months of this year has generally been milder than was the case in 1926 and there have been few complications of fatal pneumonias.

The record of the quarter is also favorable for a number of diseases of less numerical importance than the above, but nevertheless of great public health interest. The measles situation, for example, which was causing much concern at this time last year, has greatly improved. The mortality from whooping cough is much lower and that from scarlet fever a little lower. On the other hand, an increase in the diphtheria deathrate has been observed. This has caused some anxiety among those public health workers who have been most active in conducting an earnest campaign for the immunization of children against this disease. They have feared that the large and continuous decline which has been observed since 1921 in the diphtheria deathrate may be checked this year. Happily it is no longer a certainty that this will happen. As noted on page 9, the diphtheria outlook has improved somewhat in the more recent weeks. Diarrheal diseases and puerperal causes show some improvement over the first quarter of 1926.

Another increase in the cancer deathrate is one of the very few unfavorable items in the report for the quarter. This is confined to the white policyholders.

Alcoholism caused 140 deaths during the quarter, as compared

with 168 during the corresponding months of last year; and the deathrate declined to 3.2 per 100,000 from 4.0 in 1926—a drop of 20 per cent. This may presage a check in 1927 to the rising tendency

Deathrate per 100,000 Persons Exposed. First Quarters of 1925, 1926 and 1927 Compared. By Color for Principal Causes of Death. Industrial Department. Metropolitan Life Insurance Company. Premium Paying Business

CAUSE OF DEATH	DEATHRATES PER 100,000 PERSONS EXPOSED					
	WHITE			COLORED		
	Jan.-Mar., '27	Jan.-Mar., '26	Jan.-Mar., '25	Jan.-Mar., '27	Jan.-Mar., '26	Jan.-Mar., '25
ALL CAUSES OF DEATH	885.9	987.4	928.6	1,549.8	1,675.0	1,626.1
Typhoid fever	2.3	2.7	2.9	6.5	5.4	5.6
Measles	6.5	16.6	3.0	2.5	9.7	1.3
Scarlet fever	4.8	5.1	6.0	1.6	1.3	.8
Whooping cough	6.7	9.7	6.3	9.9	10.5	10.9
Diphtheria	12.6	10.9	14.4	8.1	5.6	5.8
Influenza	26.4	43.5	33.1	60.5	92.1	76.5
Meningococcus meningitis	1.0	.7	.9	1.3	.4	1.0
Tuberculosis—all forms	80.8	85.9	90.5	217.3	231.0	230.8
Tuberculosis of respiratory system	70.9	76.2	79.7	191.8	202.4	206.2
Tuberculosis of the meninges, etc	4.8	4.2	5.0	6.3	9.2	7.3
Other forms of tuberculosis	5.2	5.5	5.7	19.2	19.5	17.3
Cancer	76.3	74.1	72.5	66.8	67.6	70.6
Diabetes mellitus	18.1	19.4	18.2	20.5	15.7	19.2
Alcoholism	3.0	3.8	3.0	4.3	5.2	4.0
Cerebral hemorrhage; apoplexy	52.7	58.7	56.5	104.3	108.6	98.8
Organic diseases of the heart	136.9	149.1	135.9	206.3	217.0	235.4
Total respiratory diseases	117.4	154.7	136.5	238.1	309.7	265.5
Bronchitis	5.3	6.7	7.1	10.6	9.9	10.9
Bronchopneumonia	46.2	61.3	52.0	76.5	109.2	79.8
Pneumonia—lobar and undefined	57.7	78.2	68.3	140.1	176.6	157.1
Other diseases of respiratory system	8.2	8.5	9.1	11.0	14.0	17.8
Diarrhea and enteritis	15.1	16.9	17.6	15.6	17.8	23.6
Under 2 years	12.0	14.5	14.7	10.2	12.9	16.5
2 years and over	3.1	2.4	2.9	5.4	4.9	7.1
Acute nephritis	3.9	4.9	5.1	14.9	15.7	16.1
Chronic nephritis (Bright's Disease)	68.8	76.0	70.7	137.9	139.1	131.4
Total puerperal state	14.4	15.5	17.2	24.4	24.2	26.5
Puerperal septicemia	5.6	6.1	6.7	12.0	10.3	11.9
Puerperal albuminuria & convulsions	2.9	3.6	3.5	5.2	6.7	4.4
Other diseases of puerperal state	5.9	5.8	7.0	7.2	7.1	10.2
Total external causes	66.7	64.2	66.7	117.4	112.9	103.6
Suicides	8.5	7.4	7.5	7.7	4.3	4.2
Homicides	3.0	2.8	3.3	36.5	32.2	31.8
Accidental and unspecified violence	55.2	54.1	55.8	73.3	76.4	67.7
Accidental drowning	2.6	2.6	1.6	3.2	1.9	2.1
Automobile accidents	12.8	12.2	11.9	14.4	11.0	9.0
All other and ill-defined causes of death	171.5	175.0	171.9	291.5	285.3	298.5

of the alcoholism deathrate which has been observed during recent years. There was also a 12 per cent. decline in the mortality from cirrhosis of the liver, but an increase in acute poisonings by wood and denatured alcohol.

The unsatisfactory record of the quarter with respect to violent deaths is in sharp contrast to that for diseases. Among white policyholders, suicides, homicides, and fatal accidents all recorded higher rates than for the first three months of last year. Among the colored, the suicide rate rose sharply and that for homicides considerably; accidental deaths dropped a little.

Still another year has started discouragingly with respect to automobile fatalities, the rate among the white policyholders for the first quarter showing an increase of 4.9 per cent. and that among the colored of 30.9 per cent. as compared with the corresponding period of 1926.

The table on page 3 presents the deathrates among white and colored policyholders, respectively, for the first three months of 1927, 1926, and 1925.

DISEASES ASSOCIATED WITH SUICIDE

Those who have attempted to explain the cause of suicide have found many antecedent conditions which play a larger or smaller part in leading up to this end-result. Mental and physical disease are undoubtedly important factors which result in suicide. Unfortunately, the facts are not always available for careful analysis. The mortality data of the Metropolitan's Industrial Department often contain additional information as to related causes in cases of self-destruction, and these have been recently tabulated in order to throw additional light on the subject. A total of 2,211 deaths due to suicide during the years 1923 and 1924 showed an associated condition of body or mind in 727 cases, or about one-third of the total. There is a strong presumption that such statements were considered important by the certifying physician or coroner although there is no assurance that such associated condition actually served as a cause.

As might be expected, the several forms of mental alienation constituted by far the most frequent complication in suicide cases. Some form of mental disease was reported in 416 of the 727 cases, or 57 per cent. Alcoholism came next in the list as a related condition. This was mentioned in 36 cases, or in nearly 5 per cent. of the total in which an associated condition was mentioned. Cerebral hemor-

rhage, or apoplexy, ranked next, and this is not surprising in view of the fact that persons who have sustained an initial attack are likely to brood over the probability of a fatal recurrence. Diseases of the nervous system, other than mental alienation and apoplexy, were reported in 31 cases. It is surprising to find very few cases of pulmonary tuberculosis, cancer, or other chronic diseases. The facts strongly suggest that suicide is in most cases the culminating act in a mental derangement, and the more complete the investigation, the more likely is this condition to be discovered in the background of the case.

SMALLPOX IN AMERICAN STATES AND CANADIAN PROVINCES, 1926

It is gratifying to report that the number of cases of smallpox has been declining since 1924. In forty-two states, the District of Columbia, and seven Canadian provinces, the number of cases reported in 1926 was 31,351, as compared with 37,616 in 1925, and 53,265 in 1924. The case-fatality rate, which shows the virulence of the disease, has likewise declined. In 1926 it was 1.2 per 100 cases which may be compared with 1.9 in 1925 and 1.7 in 1924. While the fatality rate for 1926 thus shows an improvement over the two years immediately preceding, it is still above the average for the period, 1916-1921. The case-fatality rates in Canada in recent years have, for the most part, been lower than in the United States.

The figures for the individual states in 1926 were, by and large, encouraging. Nineteen states reported no deaths, as against 14 in 1925. Only one state (Arizona) had, in 1926, a fatality rate of more than 10 per 100 cases, whereas there were five such states in 1925. The states in which most cases occurred in 1926 were California, Florida, Indiana, Ohio and Washington. These, with the exception of Florida, were among the states which led in the preceding year. Outbreaks early in 1926 were responsible for the large number of cases in Florida. Indiana and Washington showed not only increased prevalence of the disease, but slightly higher fatality rates. In Ohio, the number of cases dropped from 4,018 in 1925, to 2,133 in 1926, and in California from 4,921 to 2,794. In California, the case-fatality rate increased from 1.2 in 1925 to 8.3 in 1926, but in Ohio the disease was of a very mild type last year, with only one death among the 2,133 reported cases. The following tables show

the number of cases, deaths, and the case-fatality rates in 42 states, the District of Columbia, and seven Canadian provinces.

Obviously, there is still little basis for optimism in the smallpox situation in this country. The case of California shows what can happen when there is high prevalence of smallpox, combined with a high case-fatality rate. In that single state there occurred 232 out of the 357 deaths reported from 43 American and seven Canadian communities. It is only sheer good fortune that this high case-fatality rate did not obtain in other communities. If it had obtained generally, we would have had a death toll of 2,602 from smallpox in these communities last year instead of 363.

The smallpox situation calls for continued vigilance. Prevention of the disease by means of vaccination and revaccination is a matter of nationwide interest. In vaccination lies the only known safeguard against smallpox. This would do much to prevent the recurrence of the condition which obtained in 1922 when, with a case-fatality rate of 2.8, no less than 791 deaths occurred in 43 American commonwealths, despite the fact that the reported number of cases of smallpox that year was one of the lowest on record.

Smallpox Cases and Deaths in the United States and in Canada, 1916 to 1926

Country and Year	Cases	Deaths	Deaths per 100 Cases
United States			
1926 (42 States and Dist. of Columbia)	30,003	357	1.2
1925 (42 States and Dist. of Columbia)	36,560	707	1.9
1924 (42 States and Dist. of Columbia)	51,599	872	1.7
1923 (42 States and Dist. of Columbia)	25,943	163	.6
1922 (42 States and Dist. of Columbia)	27,928	791	2.8
1921 (42 States and Dist. of Columbia)	91,335	657	.7
1920 (47 States and Dist. of Columbia)	108,835	514	.5
1919 (43 States and Dist. of Columbia)	58,348	328	.6
1918 (39 States and Dist. of Columbia)	76,831	396	.5
1917 (38 States and Dist. of Columbia)	47,507	313	.7
1916 (30 States and Dist. of Columbia)	15,532	82	.5
Canada			
1926 (7 Provinces)	1,348	6	.4
1925 (7 Provinces)	1,056	3	.3
1924 (7 Provinces)	1,666	62	3.7
1923 (8 Provinces)	1,383	3	.2
1922 (8 Provinces)	1,950	6	.3
1921 (8 Provinces)	6,713	37	.6
1920 (8 Provinces)	7,579	53	.7
1919 (6 Provinces)	5,635	25	.4
1918 (4 Provinces)	1,295	9	.7
1917 (4 Provinces)	605	7	1.2
1916 (3 Provinces)	39	5	12.8

Smallpox Cases and Deaths in Selected States and Provinces, 1926

AREA	Cases	Deaths	Deaths per 100 Cases	AREA	Cases	Deaths	Deaths per 100 Cases
UNITED STATES (42 States and District of Columbia)	30,003	357	1.2	Selected States–Cont'd			
Selected States:				New Mexico	49	0	...
Alabama	1,285	5	.4	New York	305	0	...
Arkansas	221	0	...	North Carolina	1,594	10	.6
Arizona	18	6	33.3	North Dakota	276	0	...
California	2,794	232	8.3	Ohio	2,133	1	*
Connecticut	2	0	...	Oklahoma	868	0	...
Delaware	1	0	...	Oregon	1,557	5	.3
District of Columbia	16	0	...	Pennsylvania	39	0	...
Florida	2,890	8	.3	Rhode Island	0	0	...
Idaho	450	2	.4	South Carolina	647	2	.3
Illinois	1,073	8	.7	South Dakota	257	1	.4
Indiana	3,571	8	.2	Tennessee	607	4	.7
Iowa	1,131	2	.2	Utah	322	2	.6
Kansas	526	2	.4	Vermont	0	0	...
Kentucky	939	5	.5	Virginia	596	1	.2
Louisiana	960	8	.8	Washington	2,413	31	1.3
Maine	12	0	...	Wisconsin	350	1	.3
Maryland	5	0	...	Wyoming	22	0	...
Massachusetts	4	0	...	CANADA	1,348	6	.4
Michigan	550	4	.7	Provinces			
Minnesota	279	0	...	Alberta	202	2	1.0
Montana	395	1	.3	British Columbia	95	1	1.1
Nebraska	806	8	1.0	New Brunswick	1	0	...
Nevada	25	0	...	Nova Scotia	0	0	...
New Hampshire	4	0	...	Ontario	706	3	.4
New Jersey	14	0	...	Quebec	7	0	...
				Saskatchewan	337	0	...

*Less than .05

LONGEVITY OF COLLEGE ATHLETES

In the May, 1926, number of the STATISTICAL BULLETIN was announced an investigation into the longevity of college athletes, undertaken by the Metropolitan Life Insurance Company in conjunction with the PRESIDENTS' COMMITTEE OF FIFTY ON COLLEGE HYGIENE and its cooperating organizations, the AMERICAN STUDENTS' HEALTH ASSOCIATION, the NATIONAL COLLEGIATE ATHLETIC ASSOCIATION, and the SOCIETY OF DIRECTORS OF PHYSICAL EDUCATION IN COLLEGES. The study was limited to "letter men" who were members of the class of 1905 and prior years. The sports to be covered were football, rowing, track, baseball, basketball, la crosse, cross-country and hockey.

At the time of the announcement we already had the assurance from the authorities in eight colleges that they would submit records

for study. Since that time the number of participating institutions has been increased to nearly forty.

There are now in the hands of the Committee over 9,000 individual case records, and to this number there will be added, in the course of the next few weeks, approximately 2,000 more. Unfortunately, the records as submitted are not always complete, very often lacking essential items of information. These defects are being brought to the attention of the colleges and the number of defective records is being rapidly reduced. At the present writing nearly 7,500 of the 9,000 records received are in shape to be used in the essential tables.

The aim of the Committee has been to produce a study that would be representative of the mortality experience of the college athletes of the country. The participation of nearly forty colleges and universities in this project, therefore, is significant. Furthermore, the cooperation of this large number of colleges is making possible the first authoritative answer to the question as to the effects of participation in such sports in the after life-time of the individual. These results will be particularly valuable not only because of the widespread interest in college athletics, but also because the discussion of the effects of participation is, from the point of view of longevity, rather uninformed. The literature on the subject is very scanty. Another important feature is that, by taking men of classes prior to 1906, we shall have a group, all of whom have entered middle life; for this is the period of which the least is known about the effects of training for, and participation in athletics during the years at college.

The Committee hopes to receive all the records and to correct them by the end of the present school year. If it is successful in this effort, the mortality tables will be completed during the summer.

The colleges which are contributing records are Amherst, Brown, Bucknell, California, Chicago, Colby, Colgate, Columbia, Cornell, Dartmouth, Dickinson, Harvard, Haverford, International Y.M.C.A., Illinois, Iowa, Iowa State College, Kansas, Kansas State Agricultural, Lehigh, Leland Stanford, Massachusetts Agricultural, Michigan, Michigan State College, Michigan State Normal, Minnesota, Missouri, Northwestern, Oberlin, Ohio State, Pennsylvania, Pennsylvania State College, Princeton, Tulane, Virginia Polytechnic, Washington, Wesleyan, Williams, Wisconsin and Yale.

HEALTH RECORD FOR MARCH, 1927

March, like the two earlier months of 1927, registered marked improvement in the deathrate as compared with last year. Further-

more, the rate (10.3 per 1,000) was the lowest ever recorded in March among Metropolitan Industrial policyholders.

The remarkably favorable conditions of this month will become evident on inspection of the table on page 11. Among the children's diseases, measles and whooping cough show very marked improvement over the figures for March a year ago. The mortality from influenza dropped 58 per cent. and that from pneumonia 39 per cent. All three of the principal "degenerative diseases," cerebral hemorrhage, organic heart disease and chronic nephritis, registered large declines in mortality, and slight decreases were recorded for tuberculosis, cancer, diabetes and diarrheal conditions.

The mortality from diphtheria, it is true, increased somewhat, as has been the case for each month of 1927 to date. Fortunately the last two weeks in March and the first week in April have witnessed a decline in the deathrate from this cause and the cumulative mortality no longer shows as great an excess over that for last year as was seen earlier in 1927.

The record for violent deaths in March is unfavorable as compared with last year. Both suicides and homicides increased appreciably, while the fatal accident deathrate was substantially the same as in March, 1926. Automobile fatalities show an increase with a rate of 12.3 per 100,000 as compared with 9.7 in March, 1926.

The general deathrate for the large cities of the United States in March was 13.8 per 1,000. This exceeds slightly the figure for the previous month (13.7), but is far below the rate for March, 1926 (17.9). Increased sickness in March, as compared with February, was reported from influenza, malaria, measles, typhoid fever and whooping cough, but there were fewer cases of diphtheria and scarlet fever. The incidence of poliomyelitis and smallpox was about the same in the two months. Comparison with March, 1926, shows more cases of diphtheria, scarlet fever, smallpox and typhoid fever with less malaria, influenza and whooping cough.

The decline in diphtheria cases in March, as compared with February, is most encouraging in view of the fact that this disease has shown an unexpected rise in mortality during the first quarter of the current year as compared with the corresponding period of last year.

An increase in influenza cases was reported in most of the states tabulated, particularly in Georgia and Maryland. In several states, however, fewer cases were reported, and there is now no indication

of above-average prevalence of the disease from a country-wide standpoint.

Measles, in general, was more prevalent in March, particularly in California and Florida. In some states, however, there were fewer cases reported. The disease became epidemic in Smithport, a small city in Pennsylvania, where the situation was handled by the State Department of Health.

Smallpox cases increased in some parts of the country and declined in others. Increases were reported from West Virginia and Oklahoma, and in Logan County, in the former state, the schools were closed to students who had not been vaccinated.

Among the health activities of the month the following are noteworthy: Health cars of the Louisiana State Board of Health engaged in a two weeks' campaign over a part of the state. In Ohio, the State Department of Health is giving a series of radio talks on typhoid fever prevention and control.

The following table shows the mortality among the Industrial policyholders for March, 1927, February, 1927, March, 1926, and the year 1926:

METROPOLITAN LIFE INSURANCE COMPANY

Deathrates* per 100,000 for Principal Causes, Premium-paying Business in Industrial Department (Annual Basis)

MONTHS OF MARCH, 1927; FEBRUARY, 1927, AND OF MARCH, 1926

CAUSES OF DEATH	RATE PER 100,000 LIVES EXPOSED*			
	Mar. 1927	Feb. 1927	Mar. 1926	Year 1926†
TOTAL—ALL CAUSES	1028.5	956.6	1228.2	942.7
Typhoid fever	3.0	3.1	2.4	4.2
Measles	7.9	5.5	21.8	10.2
Scarlet fever	4.9	5.2	4.8	3.4
Whooping cough	8.3	5.3	13.8	9.6
Diphtheria	11.3	11.3	9.4	9.7
Influenza	32.3	30.0	77.2	31.0
Tuberculosis (All forms)	114.1	99.7	116.9	98.7
Tuberculosis of resp'y system	100.3	88.5	101.9	86.5
Cancer	77.2	75.5	78.2	73.5
Diabetes mellitus	19.2	18.9	21.9	16.7
Cerebral hemorrhage	58.9	57.1	69.4	55.5
Organic diseases of heart	149.4	136.7	176.8	133.9
Pneumonia (All forms)	119.9	118.0	196.8	97.9
Other respiratory diseases	19.9	18.6	19.1	13.1
Diarrhea and enteritis	16.3	14.3	17.2	29.8
Bright's disease (Chronic nephritis)	79.6	80.2	93.1	73.3
Puerperal state	17.2	14.9	17.7	15.3
Suicides	9.9	7.8	7.1	7.6
Homicides	8.1	7.2	6.6	7.0
Other external causes (excluding suicides and homicides)	55.9	54.0	56.5	62.2
Traumatism by automobiles	12.3	11.5	9.7	16.7
All other causes	215.0	193.5	221.5	190.4

*All figures include infants insured under one year of age.
†Based on provisional estimate of lives exposed to risk in 1926.

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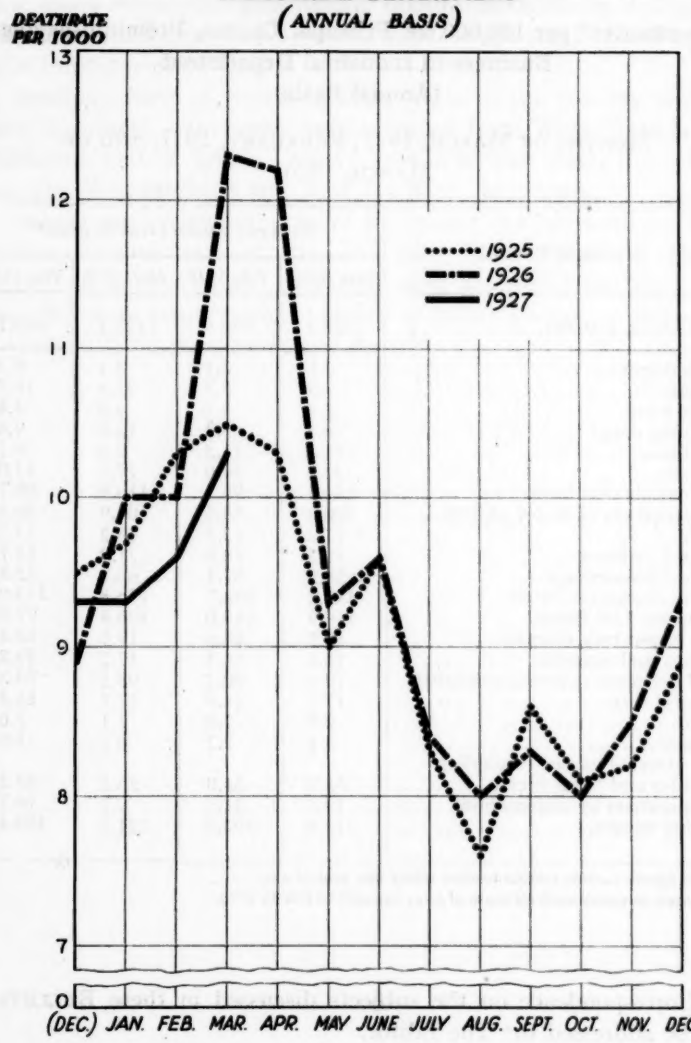
Deathrates from All Causes

METROPOLITAN LIFE INSURANCE CO.
INDUSTRIAL DEPARTMENT
(ANNUAL BASIS)



	(DEC.)	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1925		9.7	10.3	10.5	10.3	9.0	9.6	8.3	7.6	8.6	8.1	8.2	8.9
1926		10.0	10.0	12.3	12.2	9.3	9.6	8.4	8.0	8.3	8.0	8.5	9.3
1927		9.3	9.6	10.3									

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